

Waste Isolation Pilot Plant

Rail Transportation Safety Program Implementation Guide



Draft

May 2004

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Statement of Purpose

The Western Governors' Association (WGA) Waste Isolation Pilot Plant Transportation Technical Advisory Group (Technical Advisory Group), in cooperation with the U.S. Department of Energy Carlsbad Fieldoffice (DOE-CBFO), developed this *WIPP Rail Transportation Safety Program Implementation Guide* (Guide). It presents the overall transportation issues, objectives, approaches and procedures which were agreed to by the Western Corridor State Governors and the DOE-CBFO through a Memorandum of Agreement signed in 1996 and reaffirmed in 2003. These issues, objectives, approaches and procedures govern the conduct of the rail transportation of transuranic waste through the Western States.

The provisions of this guide pertain to shipments by rail of transportation packages loaded with transuranic waste ("loaded shipments") through Western States managed by the DOE-CBFO, including intersite shipments ("WIPP Shipments"). The applicable provisions of this guide shall be incorporated in DOE-CBFO contracts with rail carriers and in DOE's transportation plan.

This Guide is based upon WGA policy resolutions, enhanced safety standards, DOE orders and guidelines, and carrier contract agreements. It includes procedures developed cooperatively by the Technical Advisory Group and CBFO. It also includes provisions of the U.S. DOT *Safety Compliance Oversight Plan for Rail Transportation of High-Level Waste and Spent Nuclear Fuel* (June 1998) and the U.S. DOE *Radioactive Material Transportation Practices Manual* (September 2002).

The Guide was prepared with assistance provided through the DOE-WGA Cooperative Agreement. The WGA, through its Technical Advisory Group, provides a forum in which the Western Corridor States, DOE-CBFO, and DOE Headquarters staff cooperatively work to coordinate the implementation of program procedures and activities focused on the safe and uneventful transportation of transuranic waste.

This Guide and supporting documents address accident prevention, emergency response preparedness, medical preparedness, public information, and route designation. The WGA, Western Corridor States, DOE-CBFO, and DOE Headquarters prepared specific procedures to implement the principles and objectives. These are referenced at the end of each section and are available upon request.

The WGA, Western Corridor States, DOE-CBFO, and DOE Headquarters will annually evaluate the procedures and standards contained in this Guide. Procedures and standards will be revised as necessary to reflect the changing environment during the thirty-year shipping campaign. The WGA will distribute updated materials to participating Western State officials, the DOE-CBFO, the DOE Headquarters, and other appropriate organizations.

Western Governors' Association WIPP Rail Transportation Safety Program

The Waste Isolation Pilot Plant (WIPP) rail shipping campaign will include more than 4,400 railcars shipped to the WIPP repository in southeastern New Mexico over a 28-year period. These shipments will originate at a minimum of three major DOE sites, including Hanford, Idaho National Engineering and Environmental Laboratory (INEEL), and Savannah River Site (SRS). Shipments may originate at other sites as well. Because of the large number of shipments, the considerable mileage to be logged, and the hazardous nature of the cargo, every reasonable precaution must be taken to ensure adequate protection of public health and the environment. Moreover, public confidence in the safety of the WIPP shipping campaign requires the highest standards for incident prevention and emergency preparedness.

Recognizing that states have the responsibility for ensuring the safety of their residents and for responding to any incident which might occur, the Western Governors have unanimously adopted several related policy resolutions addressing the safety of the WIPP shipments. The objective of these resolutions is the safe and uneventful transportation of nuclear waste from current temporary storage facilities to more suitable interim or permanent repositories. The Western Governors are committed to working with Congress and the DOE-CBFO to achieve this objective.

In 1989, the WGA established its WIPP Transportation Safety Program Technical Advisory Group (WIPP TAG) to work toward achieving this objective. The Technical Advisory Group originally consisted of representatives from the seven states along the initial transportation corridor to the WIPP: New Mexico, Colorado, Wyoming, Utah, Idaho, Oregon, and Washington. The Technical Advisory Group was later expanded to include Arizona, California, Nebraska, Nevada and Texas, states through which shipments to the WIPP will also occur.

Initial funding was provided by a 1988 Cooperative Agreement with the U.S. Department of Transportation (DOT). In 1989 the Technical Advisory Group prepared a *Report to Congress* describing the needs of the states to prepare for the WIPP shipments in the following areas:

Accident Prevention

- High-Quality Drivers and Carrier Compliance
- Independent Inspections
- Bad Weather and Road Conditions
- Safe Parking During Abnormal Conditions
- Advance Notice of Shipments
- Access to Information on Shipment Status

Emergency Preparedness
Mutual Aid Agreements
Emergency Response Plans and Procedures
Training and Retraining
Emergency Response Equipment

Public Involvement and Information

The Secretary of Energy agreed with the conclusions in the 1989 *Report to Congress* and directed the DOE to enter into a Cooperative Agreement with the WGA. Working with the DOE–CBFO, the states developed a model program to help ensure that WIPP truck shipments are “safe and uneventful.” The elements of this program are described in the *Western Governors’ Association WIPP Transportation Safety Program Implementation Guide* (Guide), and generally follow the outline from the *Report to Congress*. The Technical Advisory Group updated the *Report to Congress* with a 1991 *Report to the Western Governors and Secretary of Energy*. The Technical Advisory Group identified Medical Preparedness and Routing as additional areas to be addressed. These are included in this Guide..

In 1996, the Western Corridor State Governors and the Secretary of Energy signed a Memorandum of Agreement to implement the principles and standards contained within the Guide. The Memorandum was reaffirmed in 2003. The principles and standards are designed to help achieve the Governors’ objective of the “safe and uneventful transportation of nuclear waste” through the Western States for truck shipments. They were cooperatively developed by the Western Corridor States, DOE–CBFO, and DOE Headquarters.

The DOE–CBFO is currently evaluating the use of rail for transportation of transuranic waste to WIPP. The Western Governors have determined that: “If DOE decides to transport transuranic waste by rail, DOE must ensure that such shipments follow standards, procedures, and protocols comparable to those used for shipments of TRU waste by truck” (WGA Policy Resolution 03–08). Therefore, the WGA WIPP TAG has prepared this Guide to provide procedures for rail shipments that are comparable to those used for the truck shipments. Applicable portions of the Rail Guide shall be incorporated in CBFO contracts with rail carriers and in DOE’s transportation plan. The procedures in the Rail Guide apply to all shipments by rail of transportation packages loaded with transuranic waste and managed by CBFO, including intersite shipments.

Each section of the Guide contains a summary statement describing the issue, the objective, the approach, and the evaluation process used by the DOE–CBFO and Western Corridor States for each program element. A summary table which provides information about the key documents and associated reference materials is included at the end of each section.

Transuranic Waste

Transuranic wastes are discarded materials that have been generated from activities associated with nuclear weapons production and research and development since the 1940s. This waste is

contaminated with man-made radioactive materials with atomic numbers greater than uranium, such as plutonium, americium, and curium.

Transuranic waste is officially defined as waste contaminated with alpha-emitting radionuclides, having atomic numbers greater than 92 and with half-lives greater than 20 years and in concentrations greater than 100 nanocuries per gram of waste. The waste consists of such things as laboratory clothing, tools, glove boxes, leaded rubber gloves, glassware, air filters, ash salt metals, ceramic parts, plastics, and solidified waste contaminated with man-made radioactive materials including plutonium and americium. Some of these wastes contain hazardous chemical constituents (*e.g.*, carbon tetrachloride, lead, toluene, xylene) and are classified by the U.S. Environmental Protection Agency (EPA) as “mixed” transuranic waste.

Transuranic waste shipments pose a range of potential hazards with inhalation being the primary hazard. Inhalation of certain transuranic materials, such as plutonium, even in microgram quantities, could deliver significant internal radiation doses to the body. The principal focus of the Technical Advisory Group is to reduce the chance and severity of an incident through stringent transportation safety procedures.

There are two classifications of transuranic waste: contact handled (CH) and remote handled (RH). The greatest percentage of waste planned for disposal at the WIPP site, by volume (96 percent), is CH waste, which primarily emits alpha radiation. This type of radiation cannot penetrate human skin. Therefore, external exposure to alpha radiation from contamination is usually not serious because of the protection provided by the skin. CH waste also emits gamma radiation which results in dose rates at the waste container surface of 200 millirems per hour or less at the surface of the waste container and can be safely handled without special protection when in the proper container.

A small percentage (4 percent by volume) of the waste planned for disposal at the WIPP site is RH waste, which primarily emits gamma radiation. This results in containers with a surface radiation dose rate in excess of 200 millirems per hour.

Waste Isolation Pilot Plant

The DOE constructed the WIPP in southeastern New Mexico, 26 miles east of Carlsbad. The WIPP underground facility, which is 2,150 feet underground in a 2,000-foot thick salt formation, was constructed as a research and development facility to demonstrate the safe disposal of transuranic waste from the DOE defense facilities and private contractor sites. The waste disposed at the WIPP was generated after 1970 from defense-related plutonium reprocessing and fabrication, defense-related research activities and cleanup at the DOE facilities.

Transportation System

All waste transported to the WIPP or intersite shall be in U.S. Nuclear Regulatory Commission (NRC) certified Type-B containers under 10 CFR 71 and that have been determined by the NRC to satisfy its

quality assurance requirements. Currently WIPP is certified to use two reusable shipping packages for CH waste. They are the Transuranic Packaging Transporter (TRUPACT-II) and a shorter version called the HalfPACT.

A typical rail shipment to WIPP will include a buffer car, three to four cask cars, followed by another buffer car. The cask cars are 100-ton bulkhead flat railcars. Each car can carry up to seven TRUPACT-II containers. TRUPACT-IIs loaded on rail cars will not be subject to weight constraints. One configuration of a typical rail shipment is shown in **Figure 1**.

Figure to be developed.

Figure 1 Typical shipment Configuration

The site shipping period and waste volumes to be shipped by rail are shown below:

Site	Schedule (Years)	Volume (cubic meters)	Number of Cars (7 Casks/Car)	Shipments
INEEL	23	34,962	2,018	793
Hanford	25	14,417	832	327
SRS	28	19,538	1,128	444
Total		68,917	3,985	1,564

A cutaway view of the TRUPACT- II is shown in **Figure 2**. Due to the uniqueness of the design, full-scale TRUPACT-II and HalfPACT prototypes were subjected to actual drop and fire tests to prove their ability to survive severe accident conditions. The test results were also used to improve the design of the closure seals.

Figure to be added later.

Figure 2

The TRUPACT-II is a cylindrical metal container with a flat bottom and a domed top and is transported in an upright position. A multilayered wall design increases the package strength and provides the ability to withstand potential transportation incidents. Inside the TRUPACT-II, the CH waste is sealed in 55-gallon steel drums or standard waste boxes. Each TRUPACT-II holds up to fourteen 55-gallon drums or two “standard waste boxes.” The HalfPACT container is a shorter version of the TRUPACT-II container and is designed to carry heavy material (seven 55-gallon steel drums or one standard waste box) without exceeding legal truck weight limits as defined by the DOT.

A special container, called a pipe overpack, is used to transport wastes contaminated with higher concentrations of plutonium and americium. The pipe overpack container has been approved by the NRC and is designed to be placed into another container such as a 55-gallon drum. These are for use only within the TRUPACT-II or HalfPACT and cannot be used alone, as a transport container.

DOE-CBFO is currently designing the TRUPACT-III, a Type-B package designed to accommodate oversized materials that will not fit in a TRUPACT-II without resizing or repackaging. The TRUPACT-III is designed primarily for rail transport, but could go over the road on trucks with an overweight permit. As presently designed, the package could accommodate containers up to 6 feet by 6.6 feet by 14.8 feet. It could also accommodate various configurations of 55-gallon drums and standard waste boxes. The package has a maximum payload of 12,000 pounds. On trains, the TRUPACT-III would be handled similarly to standard multimode containers. A single TRUPACT-III would be loaded on each rail car.

An important feature of the WIPP transportation system is the Transportation Tracking and Communications System (TRANSCOM). TRANSCOM is a combination of navigation, satellite communication and computer network technologies to monitor the movement of transuranic waste shipments to the WIPP.

Figure 3 depicts possible routes to be used for the rail transportation of transuranic waste to the WIPP from sites in the west. Two rail carriers, the Burlington Northern Santa Fe and the Union Pacific, are being considered as the carrier for these shipments. The possible routes reflect the different trackage controlled by these companies. Routes in the Western States shall be designated using the safety considerations and negotiation process contained in Section XII, "Rail Routing of WIPP Shipments."

The WIPP rail transportation safety planning to date has been for CH waste. RH waste may be transported to WIPP by rail. If DOE-CBFO should decide to ship RH waste by rail, the rail transportation safety program would have to be revised.



Figure 3 - Possible Rail Routes

Introductory Materials

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Western Governors' Association Resolution 03–08</i> , WGA, September 2003.	WGA	Final
<i>Report to Congress—Transport of Transuranic Wastes to the Waste Isolation Pilot Plant: State Concerns and Proposed Solutions</i> , WGA Working Group on Nuclear Wastes, June 1989.	WGA	Final
<i>Report to the Western Governors and Secretary of Energy</i> , WGA Technical Advisory Group, June 1991.	WGA	Final
Documents to be prepared		
Report to the Western Governors and Secretary of Energy, 2004.		
Reference material		
<i>Safety Compliance Oversight Plan for Rail Transportation of High–Level Radioactive Waste and Spent Nuclear Fuel</i> , U.S. Department of Transportation, Federal Railroad Administration, June 1998.	USDOT	Final
<i>WGA/DOE Cooperative Agreement, No. DE–FC04–90AL65416, as amended.</i>	WGA/ DOE–CBFO	Final

Section 1: Qualified Crews, Well–Maintained Equipment and Enhanced Carrier Compliance

Lead State: CA Assistant Lead States: OR, WA

The Issue: Qualified crews; diligent equipment and track maintenance; enhanced equipment requirements; carrier compliance with regulations and enhanced carrier performance requirements can greatly reduce the risk and consequences of rail incidents.

The Objective: Establish, implement and maintain an enhanced carrier contract and management plan for the WIPP carriers focusing on qualified crews and well–maintained equipment and track.

The Approach: Although the possibility of incidents cannot be eliminated, it can be significantly reduced by requiring qualified crews, through strict adherence to all applicable laws and regulations, and provisions to enhance safety and performance.

The FRA has adopted a *Safety Compliance Oversight Plan for Rail Transportation of High–Level Radioactive Waste and Spent Nuclear Fuel* (SCOP) (June 1998). Under the SCOP, FRA conducts audits of rail carriers similar to the audits conducted by WGA for highway carriers. FRA and DOE–CBFO shall implement the SCOP for WIPP shipments in order to test the program and make improvements in it.

Key elements of the SCOP implemented for the WIPP Rail Safety Program related to this section may include:

- Reviews shall be conducted prior to the first shipment, and at least annually for subsequent shipments to ensure that train crews are properly certified, trained, and experienced in operating over the designated routes.
- All locomotive engineers who are used for the shipments shall meet the Locomotive Engineer Certification requirements.
- All crew members shall have the appropriate hazardous materials training. Carriers shall provide appropriate radiological training for their crew members including the ALARA (As Low As Reasonably Achievable) principle and basic protective measures including time, distance and shielding.
- The rail carriers' dispatching procedures shall be reviewed at the carriers' dispatching centers for the first shipment on designated routes, and shall be periodically reviewed for subsequent shipments.

For the WIPP program, the DOE–CBFO shall include those requirements described in the WGA's document entitled *Safety Elements in the WIPP Rail Transportation Contract or Tender* in its rail transportation services contract, in DOE's transportation plan, and in related documents.

DOE–CBFO and the rail carrier shall develop and implement a preventive maintenance inspection schedule to ensure that all cask cars and buffer cars used for WIPP shipments are maintained to the highest standards. The preventive maintenance program shall be in conformance with the *WIPP Railcar Preventative Maintenance Inspection Procedures*.

The WGA, the State of New Mexico, the SSEB, and other regional organizations and tribes shall be included in the review of requests for proposals for rail service prior to issuance of the requests and in the development of contract requirements for the carrier selected.

During the rail shipping campaign, the transportation contract will be rebid periodically, as required by federal law. Although the contract carriers may vary, the imposed requirements are not expected to change.

Evaluation: The lead states will analyze all FRA audit reports. A summary of the results will be presented to the Technical Advisory Group. Audit exceptions, along with recommendations for correcting identified deficiencies, will be discussed. Appropriate corrective actions will be pursued based on the consensus of the DOE-CBFO and the Technical Advisory Group.

The schedule for evaluations will depend on the frequency of FRA audit reports. Initial evaluations could be conducted prior to the first shipment if FRA conducts an audit prior to shipments beginning. Evaluations shall be conducted following each FRA audit report for the first year, and annually thereafter.

Table 1: Qualified Crews, Well–Maintained Equipment and Enhanced Carrier Compliance

New or modified documentation to be determined for rail shipments.

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Safety Elements in the WIPP Rail Transportation Contract or Tender</i> , March 2004	OR, WA	Draft
<i>WIPP Railcar Preventative Maintenance Inspection Procedures</i> , March 2004	OR, CA, WA	Draft
Evaluation Plan		To be prepared
State Participation Program List of State Coordinators and Inspectors, Federal Railroad Administration, January 2003	FRA	Final
Reference material		
<i>Safety Compliance Oversight Plan for Rail Transportation of High–Level Radioactive Waste and Spent Nuclear Fuel</i> , U.S. Department of Transportation, Federal Railroad Administration, June 1998	FRA	Final

Section 2: Inspections of Track and Equipment

Lead State: OR Assistant Lead States: CA, WA

The Issue: A quality inspection program assures that crews and railcars perform at optimum levels, that radiation levels are within allowable limits, and that track and related safety equipment are in good condition.

The Objective: Reduce the chance of incidents from mechanical failure or human error by identifying and correcting defects before they pose a threat to shipment safety.

The Approach: The Federal Railroad Safety Act of 1970 (49 U.S.C. Chapters 201–213) gave the Federal Railroad Administration (FRA) authority over railroad safety, generally preempting independent state regulation. This Act does, however, allow states to participate in inspection activities under the federal safety laws. Western states participating in the FRA state program include Arizona, California, Idaho, Nebraska, New Mexico, Nevada, Oregon, Utah, Texas and Washington. Not all of these states participate in all aspects of the program, and many states only have a few inspectors. Colorado and Wyoming have chosen not to participate in the program. The number of inspectors by type for each participating state are listed below:

	AZ	CA	CO	ID	NE	NM	NV	OR	TX	UT	WA	WY
Track Inspectors	1	4	0	0	1	0	1	2	3	1	1	0
Motive, Power & Equipment	1	5	0	0	1	0	1	2	4	0	0	0
Operating Practices	0	8	0	0	0	1	1	1	4	0	0	0
Signal & Train Control	1	2	0	0	0	0	0	0	1	0	0	0
Grade Crossing Signal System	0	0	0	0	0	1	0	1	0	0	1	0
Hazardous Materials	2	4	0	1	0	0	0	1	2	0	1	0
Total	5	23	0	1	2	2	3	7	14	1	3	0

The inspection program consists of three elements: inspection and maintenance of rail cars, verification of crew qualifications, and verification that track and related safety equipment is adequately maintained. The carrier shall have primary responsibility for conducting inspections of railcars prior to each shipment. DOE–CBFO and the Carrier shall ensure that all WIPP rail cars are in compliance with all applicable requirements of the Federal Railroad Administration and the Association of American Railroads.

1 The FRA SCOP shall be applied to WIPP shipments. Inspection and enforcement activities for
2 radioactive material transportation are shared by federal and state agencies. Implementation of an
3 inspection program by FRA and state personnel will provide independent verification of regulatory
4 compliance, enhancing public confidence in the safety of the WIPP shipping campaign.

5 Key elements of the SCOP implemented for the WIPP Rail Safety Program related to this section may
6 include:

- 7 • A track geometry car shall be operated over designated routes.
- 8 • Visual inspections of bridges along the designated routes will be conducted.
- 9 • The rail carrier's rail flaw detection vehicle data will be reviewed to ensure that necessary
10 repairs are made prior to shipments.
- 11 • All automated warning devices at highway–rail grade crossings will be inspected.
- 12 • Rail cars and locomotives used for each shipment will be inspected to assure compliance with
13 applicable equipment safety standards.
- 14 • 2–way End–of–Train braking devices will be inspected to ensure that they are operational.
- 15 • The rail carrier's bridge inspection and management practices shall be evaluated to identify any
16 program weaknesses that could affect public safety and ensure corrective action.
- 17 • The rail carrier's latest inspection and maintenance reports for bridges on the designated routes
18 shall be reviewed.

19 Currently, Western states participating in the FRA state program include Arizona, California, Idaho,
20 Nebraska, New Mexico, Nevada, Oregon, Utah Texas and Washington. Not all of these states
21 participate in all aspects of the program, and many states only have a few inspectors. The WIPP rail
22 shipments may require additional state inspectors who will need training.

23 **Inspection of Railcars**

24 Railcar inspections shall be conducted at points of origin. DOE–CBFO shall ensure that all cask cars
25 and buffer cars are inspected prior to their point–of–origin departure. Inspections shall be performed
26 according to the *Railcar Inspection Checklist for WIPP Shipments*. Railcars shall meet or exceed the
27 requirements of the FRA Safety Appliance, Power Brake, and Freight Car Standards and the
28 requirements contained in the Field Manual of the American Association of Railroad Interchange
29 Rules. Cars not meeting inspection standards shall be repaired prior to being placed in service. A
30 decision to ship shall not be made if the shipment equipment has not passed its origin inspection.

1 The FRA and/or point of origin states may inspect cask and buffer cars of all transuranic waste
2 shipments by rail prior to their point of origin departure to assure compliance with the standards and
3 that appropriate corrective measures, if required, have been implemented prior to each shipment. Rail
4 carriers and/or the DOE–CBFO shipper of record shall coordinate and schedule inspections for loaded
5 WIPP shipments with FRA and appropriate state agencies.

6 Prior to each shipment, the FRA and/or point of origin States shall inspect each of the rail cars carrying
7 the casks to assure compliance with the applicable Hazardous Materials Regulations concerning
8 placarding, shipping papers, crew notification, and radiation limits. Inspections should be
9 commensurate with the radiological portion of the CVSA Level VI inspections and include every cask
10 car in the train. States, with pre–notification, may conduct additional inspections along the route if
11 desired. Point of destination inspections will be handled in a similar manner as with the trucking
12 campaign at the discretion of the receiving state.

13 Conductors must maintain all inspection materials with each car number specified.

14 **En Route Inspections**

15 All route states may conduct en route inspections at normal train stops, such as crew change points,
16 refueling locations and other scheduled stopping locations. Carriers shall provide access to rail yards
17 for FRA inspectors, FRA certified state inspectors, and state hazardous materials inspectors for
18 in–transit inspections. Any cask car or buffer car not passing an en route inspection shall be taken
19 out–of–service until repairs are made.

20 The FRA and/or states may inspect the track, defective bearing detectors (hot boxes) and the signal
21 system along the designated routes in advance of the first shipment.

22 **Inspections of Track**

23 Either FRA’s or the carrier’s track geometry car shall be operated over the designated route prior to the
24 first shipment and annually thereafter to ensure the quality and integrity of the geometry of the track
25 along the designated route. FRA and/or states may conduct follow–up inspections along the
26 designated routes based on the frequency of shipments, information obtained from prior inspections,
27 and FRA Safety Assurance and Compliance Program findings, if appropriate. When weather could
28 cause warping, washouts or make rails brittle, additional inspections must be made of the track prior to
29 shipments.

30 **Evaluation:** The Technical Advisory Group, DOE–CBFO, and FRA all agree that the personnel
31 completing the WIPP shipment inspections need to be competent and that all inspections are of the
32 highest quality.

33 Initial evaluations shall be conducted prior to the first shipment, immediately after the first shipment,
34 and three months after the first shipment. Evaluations shall be conducted annually thereafter.

1 The validity of the SCOP rail inspection program will be verified by maintaining a statistical data base
2 on rail shipments. The FRA and participating states (conducting inspections) will provide this
3 information to the Technical Advisory Group semi-annually for review. The Technical Advisory
4 Group will continue to review these reports and monitor the WIPP rail shipping campaign, comparing
5 data for variances and oddities. Findings from these comparisons will be used to improve the
6 inspections of WIPP rail shipments and recommend changes as appropriate.

Table 2: Inspections of Track and Equipment

New or modified documentation to be determined for rail shipments.

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Railcar Inspection Checklist for WIPP Shipments</i>	OR, CA, WA	To be prepared based upon NNPR Checklist
Evaluation Plan		To be prepared
Reference material		
<i>Safety Compliance Oversight Plan for Rail Transportation of High-Level Radioactive Waste and Spent Nuclear Fuel</i> , U.S. Department of Transportation, Federal Railroad Administration, June 1998	FRA	Final

Section 3: Bad Weather and Track Conditions

Lead State: NE Assistant Lead States: WY, OR

The Issue: Bad weather and track conditions create hazardous travel conditions and can impede emergency response.

The Objective: Ensure that WIPP shipments avoid bad weather and hazardous tracks by carefully monitoring track and weather conditions and restricting travel when adverse conditions pose a threat to shipment safety. Ensure that emergency response personnel can reach the scene of an incident.

The Approach: The shipment by rail of transuranic waste should be restricted when weather conditions are especially hazardous and pose a threat to the safety of the shipment and/or jeopardize the ability of emergency responders to respond to an incident.

Inclement weather conditions can create hazardous travel conditions. While trains may move under such circumstances, track conditions such as icing, heat buckling, etc., can create hazardous travel conditions for trains. Concurrently, inclement weather creates bad road conditions that produce additional problems and safety concerns for Emergency First Responders and the public should a rail incident occur involving radiological rail transportation. Further, inclement weather could cause problems for inspectors at inspection points and delays or even cancellation of crew changes. The safety of the public and the need to ensure public confidence in this shipping program require that reasonable measures be taken to prevent rail incidents. Safety and public confidence can be bolstered through common sense precautions and, should an incident occur, a safe, swift, and effective response to any rail transportation incident involving radioactive materials.

Implementation of the procedures for bad weather and track conditions must recognize the inherent differences between the decision by DOE–CBFO to release a shipment for travel, and the ability of the rail carriers to deal with bad weather or track conditions once a shipment is en route. Until DOE–CBFO dispatches a shipment from a site, they have absolute control over the shipment. In contrast, however, once a shipment is en route, the rail carrier’s ability to hold a shipment is limited due to the closed nature of the rail system. Therefore, the evaluation criteria may be applied rigorously to the decision to ship. If conditions change while en route, however, the carriers may need more flexibility to continue a shipment. The decision to hold a shipment while en route must be made on a case by case basis, considering all factors, including areas where the shipment could be held without disrupting rail operations.

Current weather conditions, the weather forecast and track conditions must be acceptable before dispatching a shipment. Evaluation of track conditions shall include rock fall, wind, ice, snow, ice storms, freezing rain, extreme temperatures, damage to track or road beds due to flash floods or river flooding and visibility. The decision to dispatch a shipment shall be made jointly by a representative of the generator site, carrier’s operations director, and the CMR Operator, in consultation with the point of origin state’s designated point of contact. The decision that acceptable conditions exist shall be documented.

1 The evaluation of weather conditions shall include the ability of train crews to reach crew change
2 points safely, the ability of inspectors to reach inspection locations, and the ability of emergency
3 response personnel to respond in the event of an incident. The train must not be dispatched if weather
4 is severe enough along the route to prevent an emergency response should there be an accident. A
5 shipment should not be dispatched if the forecast predicts severe weather or bad track conditions
6 which would affect the safety of the shipment when the shipment is anticipated to be in that area.
7 If a state does not concur that the shipment should be dispatched, the WIPP Transportation Manager or
8 designee shall consult with the state regarding the reasons the state recommends not dispatching the
9 shipment. Procedures to implement these policies are contained in "Procedures and Protocols for Bad
10 Weather and Track Conditions."

11 Continued evaluation of weather and track conditions shall be made in approximately 200 mile
12 increments as the shipment progresses. If a shipment is diverted to a safe holding location due to bad
13 weather or track conditions, the carrier shall hold the shipment at that location until notified to release
14 the shipment from safe holding as discussed under "Safe and Secure Holding Locations."

15 States monitor the status of WIPP shipments using the Transportation Tracking and Communications
16 2000 System (TRANSCOM2000). This allows states to notify DOE-CBFO that a shipment shall not
17 be dispatched or that a shipment shall be diverted to a safe holding location to avoid bad weather or
18 track conditions. This cooperative effort between DOE-CBFO, its carriers, and Western States
19 provides real time information to ensure WIPP shipments avoid adverse track and weather conditions
20 without causing undue delay to the shipments. (See Notification Section for details on
21 TRANSCOM2000.)
22

23 **Evaluation:** The method to evaluate bad weather and track conditions consists of two parts: an
24 evaluation of the process to share information and make the decision to dispatch a shipment; and an
25 evaluation of the procedures to avoid bad weather and track conditions while a shipment is en route.
26 The lead states will conduct an annual review of these procedures and provide suggested actions to
27 improve the system based on shipping experience.

28 All contact names and telephone numbers will be verified and updated biannually. A revised and
29 updated contact list will then be prepared and distributed. Each bad weather or track condition event
30 that occurs during actual shipments shall be reported at the next Technical Advisory Group meeting.
31 Participating states are to complete a *TRANSCOM Operators Report of Unusual Conditions* whenever
32 bad weather or track condition procedures are implemented. These reports will be evaluated by the
33 lead states when they are submitted to ensure that the standards and procedures were effective for the
34 incident reported. The lead states will prepare suggested changes or improvements to the procedures
35 to correct any critical problems encountered.

36 Initial evaluations shall be conducted prior to the first shipment during winter months and immediately
37 following the first shipment which required safe and secure holding. Evaluations shall be conducted
38 annually thereafter.

Table 3: Bad Weather and Track Conditions

New or modified documentation to be determined for rail shipments.

Documents	Responsible for Updates	Status
Documents included in Guide		
Procedures and Protocols for Bad Weather and Rail/Road Conditions for WIPP Shipments (2 nd Draft)	NE	Draft March 2004
Evaluation Plan		To be prepared
Reference material		

Section 4: Safe Holding Sites During Abnormal Conditions

Lead State: WY Assistant Lead States: NM, NE

The Issue: Shipments may be delayed en route due to mechanical problems, bad weather, defective rail, derailments, hazardous track conditions or other unanticipated problems.

The Objective: Identify and/or designate safe holding locations and criteria for selecting safe holding areas if a predesignated location cannot be safely reached.

The Approach: The carrier and states, assisted by the FRA, shall identify preferred safe and secure holding locations along the route prior to the first shipment. Adequate separation from other hazardous materials and the ability to secure the shipment will be considered in selecting acceptable holding locations. The States must agree to designated Safe Holding areas.

The train should not remain parked longer than it takes to make crew changes, perform inspections, refuel, or make repairs. The trains carrying WIPP shipments should avoid using sidings for parking, but may use sidings to allow other trains with a similar priority to pass.

Any additional security while in safe and secure holding locations required by a state shall be coordinated by the shipper and/or carrier. Reasonable security, which may include a stationed law enforcement officer, a railroad police officer or law enforcement agent, must be provided on all parked trains still en route intersite or to WIPP. A train shall be considered parked when it remains idle and without movement for more than one (1) hour. The decision to release the shipment from a safe holding location shall be coordinated with the States, the CMR and the carrier.

The Technical Advisory Group has approved a set of criteria for selecting safe holding areas for WIPP shipments. DOE–CBFO has agreed to use these criteria. A hierarchy has been developed to incorporate two factors: 1) the *desirability* of a particular type of holding area; and 2) the train's *ability* to reach that holding area.

The three tier approach to selecting safe holding locations is as follows:

1st Choice: DOE & U.S. Department of Defense (DOD) facilities with rail access are the most desirable holding areas for WIPP shipments. However, it may not be possible for the train to safely reach a DOE or DOD facility. The carrier should then proceed down the hierarchy to select a holding area.

2nd Choice: If a DOE or DOD facility cannot be reached safely, the second choice is a protected siding, a safe, secure position along track controlled by the carrier. Carriers should provide the states with information on the location of protected sidings along the route. If the train cannot reach one of these facilities, the carrier should use the *3rd Choice* criteria.

1 *3rd Choice:* If facilities listed in the first or second tier cannot be reached safely, a series of
2 avoidance factors are applied to select a holding area. No priorities have been assigned
3 to these factors. It may not be possible to select a holding site that meets all of the
4 criteria listed in the third tier and the carrier in consultation with the affected state and
5 the CMR operator, will select the most suitable location. Avoidance criteria include:

- 6 • Highly populated areas
- 7 • Residential areas
- 8 • Areas that are difficult to evacuate in case of emergency (such as hospitals and
9 schools)
- 10 • Industrial areas (such as refineries)
- 11 • Proximity to rail cars or other vehicles carrying flammables or explosives
- 12 • Areas with difficult access
- 13 • Congested areas
- 14 • Poorly lighted areas
- 15 • Areas with numerous pedestrians
- 16 • Areas without train crew services

17 **Evaluation:** The criteria used to select safe holding locations and the number, type, and location of
18 predesignated safe holding locations must be periodically evaluated. The TRANSCOM
19 Communication Center (TCC), CMR, and each state must have procedures in place to carry out the
20 safe holding process. The use of DOE and DOD holding locations must be evaluated based on the
21 differing levels of security in place and to ensure that the carriers can obtain permission to use the
22 location.

23 The evaluation process for safe holding will consist of two parts: an evaluation of the criteria for
24 selecting safe holding locations and the ability of the trains to obtain safe holding at predesignated
25 locations. The lead states will work with DOE–CBFO, the carrier, and the Western Corridor States to

- 26 • Identify trips where safe holding was implemented
- 27 • Describe the reason for safe holding
- 28 • Review the use of the procedures, appropriateness of the pre-designated locations
29 and/or criteria
- 30 • Provide recommendations to improve the process.

31 Lead States will report on their evaluation at each WGA Technical Advisory Group meeting.

32 Initial evaluations shall be conducted prior to the first shipment and immediately after the first
33 shipment where safe holding is implemented. Evaluations shall be conducted annually thereafter.

Table 4: Safe Holding Sites During Abnormal Conditions

New or modified documentation to be determined for rail shipments.

Documents	Responsible for Updates	Status
Documents included in Guide		
Safe Holding Sites for WIPP Shipments		To be prepared
Evaluation Plan		To be prepared
Reference material		

Section 5: Advance Notice of WIPP Shipments, Shipment Tracking and Shipment Status Information

Lead State: UT Assistant Lead State: ID

The Issue: States need annual shipment schedules, advance notice of shipment dates, the status and location of shipments en route, and the ability to communicate directly or indirectly with the crews.

The Objective: Provide States with advance shipment schedules, an easy, reliable method to obtain shipment information, the status and location of shipments en route, and a means for communication with the crews.

The Approach: Advance notice of WIPP shipment dates, ongoing status of shipments en route and other pertinent information is required for states to monitor shipments. This information is necessary for emergency response, implementing bad weather and track condition procedures, selecting safe holding areas when needed, scheduling inspections, conducting public information programs, and communicating with the crew.

DOE-CBFO shall provide states with the same pre-notification and shipment schedules information that is provided to the states for truck shipments. DOE-CBFO provides both an annual schedule and an eight week rolling schedule electronically to the states. The annual schedule will be provided twice yearly, by January 31 and July 31. The eight week rolling schedule will reflect shipment plans eight weeks in advance and will be revised on a weekly basis. Advance notification requirements, developed cooperatively by the states and DOE-CBFO, are included in this Guide.

At least fourteen (14) days prior to the first shipment from a generator site, the DOE-CBFO Transportation Manager shall provide written notification of the first five (5) shipments to states, tribes and regional organizations. At least fourteen (14) days prior to the first shipment from a generator site by a mode not previously used, the DOE-CBFO Transportation Manager shall provide written notification of the first five (5) shipments by the new mode to states, tribes and regional organizations. Notifications will be by letter to the affected state and tribal governors, state and tribal representatives, and regional state organizations. In addition, DOE-CBFO will work with the affected regional organizations, state and tribal representatives, and other DOE offices to establish an ad hoc listing of other appropriate recipients.

DOE-CBFO shall provide a two (2) hour notification to the point of origin state prior to departure.

All rail shipments of transuranic waste will be tracked by Transportation Tracking and Communications System, Application 2000 (TRANSCOM). Route states will have access to this information. DOE-CBFO has provided training for identified TRANSCOM users in each state. DOE-CBFO will provide training and TRANSCOM access to new corridor states prior to the beginning of shipments through those states. States will be allowed to monitor the location and status of rail shipments using TRANSCOM.

1 To make sure that each car hauling transuranic waste is tracked, transponder units shall be mounted
2 and operational on each WIPP rail car prior to dispatch. Prior to the dispatch of a shipment, if the
3 TRANSCOM hardware on the cask railcars is found to be inoperable, the following actions shall be
4 taken:

- 5 • The shipper will troubleshoot the system.
- 6 • If the shipper cannot correct the problem, they will seek technical advice from their
7 support staffs or a Qualcomm dealer (where available).
- 8 • If the unit is still inoperable, it will be replaced if a spare unit is available. Spare units
9 will be kept at all sites shipping by rail.
- 10 • If the unit cannot be easily repaired or replaced (within 24-hours), the shipment will be
11 dispatched with prior notification to the affected states. “Back-up procedures When
12 TRANSCOM is Not Working” outlined in this Guide will be followed.

13 In the event TRANSCOM is not functioning properly while shipments are en route, DOE–CBFO has
14 agreed to follow backup tracking and notification procedures that are also contained in this Guide
15 (Backup Procedures When TRANSCOM Is Not Working).

16 The railroads also have methods to communicate with crews and to identify the locations of trains on
17 their system. Carriers shall work with DOE–CBFO and the Western Corridor States to develop
18 procedures to utilize their own tracking and communication capabilities to complement the
19 TRANSCOM system.

20 **Holiday Restrictions:** For reasons related to heavy traffic or limited availability of emergency
21 personnel, shipments of transuranic waste will be restricted from traveling on the following holidays:
22 New Year’s Day, Good Friday/Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving,
23 and Christmas. For weekend or three-day holidays (typically Good Friday/Easter, Memorial Day,
24 Labor Day), shipments are to arrive at the WIPP site by 1600 hours Mountain Time (MT) on the
25 Friday of the three-day holiday weekend (and by 1600 hours MT on Thursday for Good Friday/Easter).
26 Shipments can resume after midnight on the day following the designated holiday or holiday weekend.

27 Thanksgiving will be treated similarly with shipments arriving at the WIPP site by 1600 hours MT on
28 the Wednesday before Thanksgiving and not resuming until after midnight on Sunday. When a
29 holiday falls on either a Monday or Friday (i.e. New Year’s, Independence Day, and Christmas), the
30 shipments are to arrive by 1600 hours MT the day before and the holiday will be treated as a three-day
31 holiday weekend.

32 Shipments which depart a site in anticipation of completing the trip within these time frames, but are
33 delayed en route prior to a holiday will either be completed (assuming weather and road conditions are
34 acceptable) or will be held in safe holding areas. These situations will be treated on a case-by-case
35 basis and in consultation with states along the route.

1 **State Holidays:** States and tribes may identify specific holidays and/or events which should be
2 avoided. In designating state, tribal and local holidays and/or events, the states will base the
3 designation on the following criteria:

- 4 1. The holiday and/or event will generate significant vehicular and/or pedestrian traffic affecting
5 travel and safety along the route to be used by the WIPP shipment.
- 6 2. The holiday and/or event will require the allocation of a significant amount of local law
7 enforcement and/or emergency response resources and personnel, thereby reducing the
8 capability to respond adequately to an incident involving a WIPP shipment.

9 **Evaluation:** The WIPP shipment schedules and TRANSCOM2000 will be evaluated for the ease of
10 use and the information provided. The TRANSCOM2000 system will be evaluated for system stability
11 and effectiveness of the procedures that affect the states' ability to track shipments and their status.

12 The lead states will conduct an annual survey of the states to obtain information on the effectiveness of
13 the advance notification, the shipment tracking program, and procedures for evaluating route
14 deviations and other tracking issues. Results from this survey will be presented to the Technical
15 Advisory Group and DOE-CBFO along with recommendations for improvement.

16 DOE-CBFO, DOE-Albuquerque, and the Western Corridor States will continue to work together to
17 enhance the WIPP advance schedule information and TRANSCOM2000 and to identify the
18 information to be provided by TRANSCOM2000. States shall include an evaluation of
19 TRANSCOM2000 in the reports prepared for exercises or evaluations that use TRANSCOM2000 as
20 part of the exercise (e.g. safe holding areas evaluation, WIPPTREX).

21 Initial evaluations shall be conducted prior to the first shipment, immediately after the first shipment,
22 and three months after the first shipment. Evaluations shall be conducted annually thereafter.

Table 5: Advance Notice of WIPP Shipments, Shipment Tracking and Shipment Status Information

New or modified documentation to be determined for rail shipments.

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Advance Notice of TRU Waste Shipments, Idaho, May 1999.</i>	ID/UT	Final
<i>Advance Notice Information Requirements, Idaho.</i>	ID/UT	Final
<i>Back-up Procedures When TRANSCOM Is Not Working, Oregon, 1998.</i>	ID/UT	Final
<i>Listing of Route Specific State and Tribal Holidays and Events</i>	WGA	To be prepared
Evaluation Plan		To be prepared
Reference material		
<i>TRANSCOM Control Center Procedures.</i>	DOE	Final
<i>Central Monitoring Room Procedures.</i>	DOE-CBFO	Final
<i>TRANSCOM Requirements Specification, Prepared for Transportation Technologies Group, Engineering Coordination and Analysis Section, Chemical Technology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee, December 12, 1994.</i>	DOE	Draft

Section 6: Medical Preparedness

Lead State: AZ Assistant Lead States: CO, ID, NM

The Issue: Effective medical response to a WIPP transportation incident requires a clear understanding of radiological response plans and procedures by emergency medical personnel in the field and at hospitals, adequate training, and the necessary supplies and equipment.

The Objective: Establish and maintain an effective emergency medical response capability along WIPP transportation routes.

The Approach: Medical personnel along WIPP routes are an important and integral component of the comprehensive emergency response system. DOE–CBFO will make provisions for and cover the expense of training for hospital and emergency medical personnel along WIPP transportation routes, similar to that which is currently provided for truck shipments.

The Technical Advisory Group has developed a *Regional Medical Preparedness Action Plan* for the WIPP shipping campaign. This plan identifies key elements and activities for emergency medical preparedness for WIPP transportation incidents. These include assessments of hospital readiness; development and refinement of radiological response plans and procedures; training, drills and exercises; and the identification and purchase of appropriate radiological and non-radiological supplies and equipment. States may use the *Action Plan* as the basis for developing the emergency medical preparedness program that best meets their respective individual needs, and will strive for consistency among state programs wherever possible.

States have generally implemented the *Action Plan* and have provided training and equipment to medical facilities along the WIPP highway routes. Any significant deviation from the highway routes by the rail shipments will require the states to implement the *Action Plan* in new areas. Therefore, medical preparedness shall be considered during the route selection process. WIPP shipments will only be routed through states which have had adequate lead time to implement the *Action Plan*. DOE–CBFO will make provisions for and cover the expense of training for hospital and emergency medical personnel along WIPP transportation routes.

To initiate the *Action Plan*, WGA coordinated an assessment of the medical facilities in the five states between the Idaho National Engineering and Environmental Laboratory and WIPP. This assessment included recommendations for strengthening medical preparedness for WIPP shipments. The states are now carrying out the recommendations, as appropriate. Other states are encouraged to conduct a medical preparedness assessment of their medical facilities.

Western States on the WIPP transportation corridor continue to work with potentially affected medical facilities and personnel to ensure the development of adequate, up to date radiological response plans and procedures. These plans and procedures must include provisions for the protection of emergency medical responders and also for the treatment of incident victims who may have been exposed to or contaminated by radioactive materials. Planning and response guidance is provided by such organizations as the American Medical Association, American College of Emergency Physicians, the

1 Joint Council on the Accreditation of Hospital Organizations and the Radiological Emergency
2 Assistance Center/Training Site (REAC/TS).

3 Training for both pre-hospital and hospital emergency medical personnel is an important element of
4 the WIPP Emergency Medical Preparedness Program. Emergency medical technicians, paramedics,
5 and hospital emergency department personnel who may be required to handle and treat WIPP
6 transportation incident victims must be prepared to do so in a safe and effective manner. Training
7 encompasses classroom courses, in-hospital drills, and field exercises. Requisite hospital personnel
8 training will be provided through Westinghouse TRU Solutions, the management and operations
9 contractor for the WIPP facility. DOE-CBFO committed to provide this training to the Western
10 Corridor States in the Cooperative Agreement with WGA.

11 For states conducting emergency response field exercises such as a WIPPTREX, emergency medical
12 personnel should be involved in the exercise and should be provided medical training before the
13 exercise. Pre-hospital and hospital emergency medical personnel are key players in any
14 comprehensive WIPP emergency preparedness program.

15 States should assess current emergency medical technician and paramedic training opportunities and
16 include hazardous materials response in the curricula. That assessment should specifically include
17 radioactive materials and patient care related to potential exposure or contamination from radioactive
18 materials. The continuity of pre-hospital and hospital training response procedures should be
19 assessed. Based on the lead states recommendations, the *Hospital Emergency Response for Radiation*
20 *Injuries and the Contaminated Patient* course should include how to deal with pre-hospital and
21 medical issues.

22 Finally, states are working to ensure emergency medical personnel are properly equipped to handle a
23 WIPP transportation incident. The *Action Plan* lists recommended supplies and equipment for
24 hospitals, and states should include equipment needs in their medical assessments.

25 **Evaluation:** Key elements and activities needed for an effective response are identified in the *Action*
26 *Plan*. This *Action Plan* serves as the basis for assessing the adequacy of the regional emergency
27 medical response capability for a WIPP incident.

28 Each state will be responsible for evaluating the effectiveness of the WIPP emergency medical
29 preparedness capability within its borders. States should include in-hospital drills and various field
30 exercises, such as WIPPTREX, in their evaluations. The adequacy of emergency medical response
31 plans, procedures, and equipment; the effectiveness of training; and the performance of emergency
32 medical personnel will be evaluated. Areas for improvement will be identified.

33 For each DOE-CBFO sponsored WIPP exercise, a report documenting the exercise and its evaluation
34 will be prepared and distributed to the Technical Advisory Group. Semi annual meetings of the
35 Technical Advisory Group will be used as a forum to discuss relevant findings and recommendations
36 for enhancement of the states' emergency medical response capability. Areas identified for

- 1 improvement will then be addressed and incorporated in biennial revisions of the *Regional Medical*
- 2 *Preparedness Action Plan*.

Table 6: Medical Preparedness

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Initial WIPP Transportation Corridor Regional Medical Preparedness Assessment</i> , Prince and Associates, Denver, Colorado, June 1993.	WGA	Final
<i>Regional Medical Preparedness Action Plan</i> (Revision 6), WGA Technical Advisory Group, August 1993. (Contained in Appendix Two of the Assessment).	WGA Technical Advisory Group	Final
Evaluation Plan		To be prepared
Reference material		
<i>State of New Mexico's Emergency Medical Response to WIPP Action Plan</i> , New Mexico Department of Health/Emergency Medical Services Bureau, Santa Fe, New Mexico, 1991.	NM	Final
<i>Report of the Governor's WIPP Emergency Response Medical Training Advisory Committee</i> , New Mexico Department of Health/Emergency Medical Services Bureau, Santa Fe, New Mexico, September 1994.	NM	Final
<i>Hospital Emergency Response for Radiation Injuries and the Contaminated Patient</i> , training materials, Radiation Management Consultants, Inc	RMC	Pending
<i>WIPP Transportation Incident Emergency Medical Response Guide</i> , New Mexico Department of Health/Emergency Medical Services Bureau, Santa Fe, New Mexico, 1998.	NM	Final

Section 7: Memoranda of Understanding

Lead State: NM Assistant Lead States: NE, CA

The Issue: Emergency responders must have access to an incident scene involving a rail shipment of transuranic waste. For rail, private and public responsibilities must be clearly defined.

The Objective: Ensure a swift response by capable responders, regardless of jurisdiction or land ownership.

The Approach: Specific memoranda of understanding will be developed between the states, tribes and the carriers, providing for access to railroad property by state and local responders, clearly delineating private and public responsibilities and defining the approach to be taken in the event of a rail incident. For areas where the track is not readily accessible by motor vehicle or for periods when weather conditions make access difficult for first responders, the memoranda shall also specify the methods carriers will use to transport responders to the scene of an incident. The memorandum shall specify that emergency responders will be provided with a rail system map with the nearest road access points, GPS coordinates if available, and the rail operations center telephone numbers.

The memoranda of understanding will specify that the incident command system shall be used and that the Incident Commander shall be a state, tribal or local official as described in the emergency response plan for the jurisdiction where the incident occurs.

If a route selected involves more than one railroad company, a separate memorandum shall be developed for each company.

Evaluation: Initial evaluations shall be conducted prior to the first shipment. Evaluations shall be conducted annually thereafter.

The most effective method of evaluating existing memoranda of understanding between states and railroad companies is through training exercises such as WIPPTREX. States planning WIPPTREX exercises should include joint exercises with carriers and/or DOE-CBFO to evaluate existing agreements or the need for an agreement if one is not already in place. The after-action report for each exercise shall include a discussion of the effectiveness of mutual aid agreements, when appropriate.

If a mutual aid agreement is activated due to a transportation incident, a detailed after-action report shall be prepared. Lead states will review the after-action report to determine if changes in the model agreement are required.

Table 7: Memoranda of Understanding

Documents	Responsible for Updates	Status
Documents included in Guide		
Model Memorandum of Understanding between States and Rail Carriers		To be prepared
Evaluation Plan		To be prepared
Reference Material		
Emergency Management Assistance Compact (PL 104-321)	N/A	Final
Western Interstate Nuclear Compact (PL 91-461)	N/A	Final
Federal Civil Defense Act	N/A	Final

Section 8: Emergency Response Plans & Procedures

Lead State: ID Assistant Lead States: NV, AZ

The Issue: State and local emergency response plans and procedures provide a coordinated, timely, and effective incident response to ensuring the health and safety of the public and the environment. Railroads transporting WIPP shipments need to be responsive to state and local emergency plans and procedures. Emergency incidents may occur on or near state borders and may require assistance from a neighboring state. Neighboring states need to be aware of the emergency response resources located near the borders.

The Objective: Develop effective state and local emergency response plans and procedures for responding to WIPP or intersite rail incidents along the entire shipping corridor. Ensure railroads are responsive to the needs of state and local emergency responders. Ensure bordering states are aware of each other's emergency response assets and processes for obtaining mutual aid assistance.

The Approach: Federal, state, and local agencies and rail carriers have varied responsibilities and actions for responding to an emergency incident involving a WIPP or intersite rail shipment. States are responsible for periodically reviewing and updating state and local emergency response plans and procedures to include emergency response to WIPP rail shipments. States will review and evaluate the effectiveness of DOE-CBFO and rail carrier emergency response plans and procedures to ensure they are responsive to state and local emergency response needs in preserving the health and safety of the public and the environment. These reviews will be done annually and the results submitted to the WGA Technical Advisory Group.

DOE-CBFO is responsible for ensuring the railroad carrier is required by contract to implement acceptable emergency response plans and procedures that are responsive to the state and local needs. DOE-CBFO is responsible for reviewing WGA Transportation Working Group evaluations and recommendations and for ensuring agreed changes are implemented in DOE-CBFO and/or rail carrier emergency plans and procedures. As agent for the shipper of record, DOE-CBFO shall provide responders and/or state representatives shipper-related emergency information and maintain a 24-hour emergency telephone contact for technical advice and detailed information regarding the shipments.

Response actions by railroads must be in conformance with state plans and procedures. The carrier is responsible for providing emergency response assistance. The carrier has primary responsibility for package and transporter recovery, cleanup, and site restoration. These operations will not begin until the emergency phase of any incident is terminated by the Incident Commander following a determination that no radiological hazard or other hazard is present. DOE-CBFO shall ensure that rail carriers have specific written procedures for providing recovery and cleanup. Recovery operations shall be coordinated with the Incident Commander and/or the state on-scene authority. Package recovery shall be in accordance with the *Recovery Guide for Packaging* (DOE/CAO-94-1007). Lifting lugs and welding rods for attaching the lugs to the TRUPACT-II shall be carried on each rail car. Standards for cleanup and restoration shall be as established by federal regulations and verified by the appropriate state authorities.

1 Advance and periodic emergency planning and exercises shall be available to ensure all response
2 actions and responsibilities are covered and current. Coordinated planning and exercises between
3 states, including local emergency responders as appropriate, DOE–CBFO, and the rail carrier ensure
4 each are familiar with the others’ specific plans and procedures.

5 Interstate emergency response assistance may be necessary for a timely response to incidents occurring
6 near bordering states. The Emergency Assistance Management Compact (EMAC) is the most recent
7 Congressionally approved emergency/disaster assistance compact to provide assistance between
8 bordering states. States are encouraged to train and exercise emergency responders under the EMAC.
9 The EMAC information on computer file is available through the Western Governors’ Association or
10 through state Emergency Management or Homeland Security Agencies.

11 **Incident Notifications:**

12 In the event of an incident, the carrier will provide immediate notification of an incident to
13 DOE–CBFO, which will then provide that information to the states and local responders. In the event
14 of an incident, the WIPP CMR shall notify the appropriate local law enforcement authority, the state
15 24-hour contact number, and DOE Albuquerque Operations Office.

16 If the incident is reported by other than the crew, and the rail carrier’s dispatch center is unable to
17 contact the crew, the TCC shall inform the appropriate state or tribal authority identified in *State*
18 *Contacts in the Event of an Incident* that the crew is not responding. The WIPP CMR shall notify
19 local jurisdictions if the crew does not respond to communications and request that the local
20 authorities locate the train and verify with the WIPP CMR if there is an emergency.

21 In the event a WIPP or intersite shipment is involved in an incident or accident, a coordinated effort is
22 needed among DOE–CBFO, states, and regional organizations to provide complete, timely, accurate
23 and unbiased information to the public. The release of information to the public for incidents
24 involving WIPP or intersite rail shipments shall be handled based upon the *Public Information*
25 *Coordination for WIPP Transportation Incidents and Accidents*.

26 Emergency response plans describe the organizations involved in a response and their responsibilities.
27 The plans include emergency response procedures, which tell how the planned activities will be
28 implemented. Each state’s emergency response plan and procedures may include a section describing
29 a response to WIPP rail emergencies. Bordering states are encouraged to plan and exercise consistent
30 emergency responses to WIPP or intersite rail emergencies.

31 For WIPP incidents, the establishment of the Incident Command System shall be in accordance with
32 the existing plans, protocols and procedures of the state, tribal or local jurisdiction. In all cases, the
33 Incident Commander shall be a state, tribal or local official as described in the emergency response
34 plan for the jurisdiction where the incident occurs. A Unified Command System may also be
35 established, as appropriate.

DOE–CBFO, when requested, shall provide technical advice and assistance. DOE–CBFO shall assist state and local officials with emergency public information upon request.

Each state along a WIPP shipping corridor takes its own individual approach to transportation emergency response planning. This is especially true regarding the division of responsibilities between various state agencies. Several states developed emergency response plans for radiological transportation incidents (*e.g.*, Wyoming). These plans are available for use as a model for other states, should they wish to develop their own plans. There are many other available guidance documents that can be used to determine the components of an emergency response plan. These documents are referenced in the attached table.

Oregon developed model field procedures for response to a radiological transportation incident. Other states have used the generic model to develop their own procedures. A copy of the generic procedures is included in this Guide.

The states also review DOE’s plans and procedures for response to a WIPP or intersite incidents. The review is to ensure consistency of federal actions with state and local actions. Selected procedures are included in this Guide.

Evaluation: Each state is responsible for reviewing and updating its own emergency response plans and procedures as prescribed, usually annually. Updates keep the plans and procedures current and allow input from lessons learned from exercises and shipments.

Exercises are used to test emergency plans and to train responders. Comments from exercise participants and evaluators who observe the exercise are used to identify ways the plan and procedures can be improved. Lead states shall review comments, lessons learned, and corrective actions identified during WIPP rail emergency response exercises and summarize significant findings in a report for the other states. This report will be distributed by the WGA.

DOE’s plans and procedures will also be tested during WIPP rail emergency response exercises. Lead states shall prepare suggested changes or improvements to correct any problems identified in these plans and procedures. These suggested changes shall be provided to the other states and DOE–CBFO.

Table 8: Emergency Response Plans & Procedures

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Oregon Field Procedures (Revised July 2003)</i> , Oregon.	OR	Final
<i>Emergency Planning, Response, and Recovery Roles and Responsibilities for TRU–Waste Transportation Incidents</i> (DOE/CAO–94–1039), DOE Albuquerque Operations Office and Carlsbad Area Office, January 1995.	DOE	Final
<i>Public Information Coordination for WIPP Transportation Incidents and Accidents</i> , Oregon, February 1998. (See Table 11)	OR	Final
Evaluation Plan		To be prepared
Reference material		
<i>Recovery Guide for Packaging</i> (DOE/CAO–94–1007), Carlsbad Area Office, January 1995.	DOE	Final
<i>Incident/Accident Response Team Guide</i> (DOE/CAO–94–1008), CAO, September 1994.	DOE	Final
<i>Guidance for Developing State, Tribal, and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents</i> , FEMA–REP–5, Revision 2, Nov. 2000.	FEMA	Final
<i>Criteria for Review of Hazardous Material Emergency Response Plans</i> , National Response Team, NFT–1A.	FEMA	Final
<i>Planning Guide and Checklist for Hazardous Materials Contingency Plans</i> , FEMA–10.	FEMA	Final
<i>Guide for the Review of State and Local Emergency Operations Plans</i> , CPG 1–8A.	FEMA	Final

Section 9: Emergency Response Equipment

Lead State: ID Assistant Lead States: UT

The Issue: Emergency responders need specialized equipment to respond to a WIPP shipment incident.

The Objective: Acquire and maintain adequate equipment to respond to a WIPP shipment incident.

The Approach: Responders need proper equipment for response to an incident involving a WIPP shipment. Proper equipment includes primarily radiation detection equipment and personal protective equipment (PPE). DOE–CBFO will continue to assist the states in acquiring and maintaining adequate equipment for emergency responders along all WIPP routes to respond to a WIPP shipment incident.

Responders must select the appropriate PPE based upon all hazards present, not just transuranic waste. The discussion below assumes that responders have determined that transuranic waste is the only hazard present.

These equipment needs vary depending on the role of the responder and the agencies requirements. For example, first responders would likely enter the immediate incident scene only to conduct lifesaving and rescue. The “bunker gear” and self contained breathing apparatus (SCBA) that most fire departments have is sufficient for this task. This entry could be conducted without radiation detection equipment, if none is immediately available.

Secondary responders, such as State Response Teams, are responsible for assessing the nature and extent of the incident and identifying contaminated individuals. For transuranic waste, these tasks would require PPE such as Tyvek suits and respirators, as well as radiation detection instruments. The organizations responsible for cleanup would require more sensitive instruments to complete the area radiation and contamination surveys.

Each state has approached the issue of equipment acquisition, distribution, and maintenance in a different manner. Most states have extremely limited amounts of radiation detection equipment capable of detecting the alpha radiation emitted by transuranic waste. Some states have chosen to purchase alpha detection instruments and provide them to secondary responders in preparation for WIPP shipments.

States have generally acquired the appropriate equipment and have provided training on this equipment to emergency responders along the WIPP highway routes. Any significant deviation from the highway routes by the rail shipments will require the states to acquire equipment and train emergency responders in new areas. Therefore, the status of equipment shall be considered during the route selection process. WIPP shipments will only be routed through states which have had adequate lead time to acquire equipment and train emergency responders on this equipment.

1 There is a wide range of equipment types and brands available to meet these needs. In selecting which
2 equipment to purchase, states considered such issues as cost, compatibility, effectiveness, portability,
3 reliability and durability under field conditions.

4 **Evaluation:** Exercises will be used to evaluate whether responders have the proper equipment for
5 responding to an incident involving a WIPP shipment. Each state will consider this as a key objective
6 during a WIPPTREX or any other exercise involving a transuranic waste shipment. States are
7 responsible for evaluating whether responders have adequate radiation detection equipment, that it is
8 properly calibrated, and whether the responders are properly trained in its use. States are also
9 responsible for determining whether responders have the proper PPE. Finally, states are responsible
10 for evaluation and selecting specific types or brands of equipment.

11 If a state is involved in an actual response to a WIPP transportation incident, the after-action
12 evaluation is to consider the issues of equipment performance, training and the proper use of PPE. The
13 evaluation shall also review whether any injuries occurred as a result of inadequate equipment, training
14 on the use of equipment, or PPE.

Table 9: Emergency Response Equipment

Documents	Responsible for Updates	Status
Documents included in Guide		
Radiation Detection Equipment for WIPP Incidents, Utah, March 1998.	UT	Final
Evaluation Plan		To be prepared
Reference material		
Energy compensated probes letter	NM	Final

Section 10: Training and Exercises

Lead State: UT Assistant Lead States: CO, AZ

The Issue: The WIPP Program significantly increased or will increase the number and size of radiological shipments through many states. Emergency responders in affected jurisdictions need training to adequately manage the risks associated with these shipments.

The Objective: Provide affected emergency responders with the knowledge and skills necessary to protect themselves and the public from the hazards associated with WIPP shipments. Use training and exercises to build public confidence in the program.

The Approach: DOE–CBFO shall continue to offer training to the states through the State and Tribal Education (STEP) program to ensure that appropriate training courses are available, including hands-on courses designed to address the unique situations encountered when responding to rail incidents. DOE–CBFO shall expand the WIPPTREX and WIPPTRAX programs to provide additional exercises for rail shipments.

The goal of the WGA training effort is to provide references and resources for radiological training, drills, and exercises to ensure that employees designated to respond to WIPP transportation incidents have the competencies appropriate to their assigned level of response. An overview of training and exercise programs is provided in the *Training and Exercise Resources for WIPP Shipments*.

States have provided training to emergency responders along the WIPP highway routes. Any significant deviation from the highway routes by the rail shipments will require the states to train emergency responders in new areas. Therefore, the status of training shall be considered during the route selection process. WIPP shipments will only be routed through states which have had adequate lead time to train emergency responders.

For rail shipments, the TETRA/RAIL course previously offered at the Association of American Railroad's (AAR) Transportation Technology Center in Pueblo, CO should be reactivated. This course is necessary for responders to learn the techniques for use on rail incidents involving radioactive and multiple other potential hazards to responders. It also addresses those specific requirements involved in response to a rail incident and how rail incidents differ from radiological incidents on highways.

Selected rail carrier emergency response personnel shall also receive the appropriate levels of training. This could be accomplished by including the carriers' emergency response personnel into the training being provided to local emergency responders along the route.

The Technical Advisory Group advocates strict compliance with Occupational Safety and Health Administration (OSHA) and U.S. Environmental Protection Agency regulations as well as other applicable federal, state, local and professional organizations' standards regarding the training of employees assigned to positions requiring handling of hazardous materials, including WIPP TRU-

waste transportation incidents. In particular, the Technical Advisory Group recognizes and supports OSHA's policy that it is the employer's responsibility to determine the appropriate level of training required, provide the required training, and certify that the employee demonstrates the competencies following initial training and annual refresher training.

DOE-CBFO, in consultation with the Western States, developed the (STEP) emergency responder training courses specifically for WIPP shipments. Current courses include First Responder, First Responder Refresher, Command and Control, Radiological Instrumentation Training for Emergency Responders and Train-the-Trainer. DOE-CBFO shall modify these courses to include information on the rail shipments. The Technical Advisory Group will provide input on course development and the direction of the STEP training program to ensure the needs of the target audiences are addressed.

To implement the inspection program, state radiological inspectors may be used to conduct the radiological portion of the inspections. These inspectors may not have adequate training on workplace safety in the railroad environment. Therefore, DOE-CBFO shall fund training on workplace safety in the railroad work environment for State radiological inspectors who are not FRA State Participation Program inspectors.

Exercises are an integral part of any training program. Exercises can enhance learning, test systems, increase awareness, and provide information to evaluate the effectiveness of training. The exercise process is one in which a community participates in training, organizes public information/education/outreach, and conducts drills, tabletop, functional, and full-scale exercises.

DOE-CBFO developed an exercise program that provides an opportunity to evaluate state and local capabilities. The WIPP Transportation Emergency Exercise (WIPPTREX) program was designed to evaluate the state and local response capabilities to a WIPP incident. WIPPTREX exercises are held twice a year on a rotational basis among Western States. Additionally the State of New Mexico, as the host state for WIPP, conducts two WIPP Transportation Exercise for New Mexico (WIPPTRAX) exercises each year.

DOE-CBFO shall expand the WIPPTREX program to provide additional exercises for rail shipments. For the Western States, DOE-CBFO shall support at least one rail WIPPTREX exercise each year in addition to the two highway WIPPTREX exercises. The rail carriers and their contractors shall participate in WIPPTREX exercises. Rail exercises shall also be available for the New Mexico WIPPTRAX program.

Evaluation: Changes in regulations, procedures, policies, and other factors may result in different training and exercise requirements for each state. Courses need to be routinely reviewed to ensure they are accurate, current, and appropriate.

Under the WIPP Land Withdrawal Act, CBFO has interpreted that OSHA is required to evaluate the STEP courses. While OSHA agreed to evaluate the STEP training program every two years, their policy specifies that it is the employer's responsibility to certify an employee's training and competency. Lead states will work with DOE-CBFO and its contractors to evaluate, review, and

1 update the course material prior to submittal to OSHA for review. The evaluation is to include a
2 periodic sampling of course students to assess the usefulness of the training material and the students'
3 retention of the information. Finally, under the WIPP Land Withdrawal Act, DOE-CBFO must
4 conduct an assessment of the level of training along the corridors and publish the results in a report
5 periodically.

6 Each state should continue to evaluate whether it is providing sufficient training and exercise
7 opportunities to its emergency responders. States may wish to set goals to train a certain percentage of
8 state and local emergency responders annually. Each state should also ensure that responders all along
9 their portion of the route have been trained, and eliminate “gaps” where no or few emergency response
10 personnel have received training. States should also continue to evaluate whether responders are
11 receiving refresher training on a regular basis.

12 States should share any important lessons learned from their individual evaluations with the lead
13 states. A summary of this information will be compiled by the lead states biannually and provided to
14 the other states and DOE-CBFO.

15 Initial evaluations shall be conducted prior to the first shipment. Evaluations shall be conducted
16 annually thereafter.

Table 10: Training and Exercises

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>Training and Exercise Resources for WIPP Shipments</i> , October 2002.		Draft
<i>Emergency Response</i> , A WIPP Training Fact Sheet, November 1995.	DOE-CBFO	Final
U.S. Department of Labor letter by Mary Ann Garrahan, 8/19/02 regarding OSHA review of WIPP Training.	OSHA	Final
Evaluation Plan		To be prepared
Reference material		
Command and Control, Transportation Emergencies Course, USDOE, November 1997.	DOE-CBFO	Final
<i>Guidance for Developing State, Tribal, and Local Radiological Emergency Response Planning and Preparedness for Transportation Accidents</i> , FEMA-REP- 5, Rev.2, November 2000.	FEMA	Final
Guidelines for Public Sector Hazardous Materials Training, FEMA, March 1998.	FEMA	Draft

Expectations

Section 11: Public Information and Participation

Lead State: OR Assistant Lead States: NV, NM

The Issue: The public and news media have a heightened concern about the transport of radioactive materials.

The Objective: Clearly communicate to the media and public the actual risk of the shipments and the safety measures in place. Encourage continued public involvement in program planning and review. Proactively provide information on WIPP incidents and accidents to the news media.

The Approach: The goal of the Western Governors is the safe and uneventful transport of transuranic waste to WIPP. This will not be possible unless the public and media have confidence that the WIPP shipping campaign requires the highest reasonable standards for incident prevention and emergency preparedness. DOE–CBFO will assist the states in providing public information along shipping corridors that explains the safety measures in place and the actual risk of the shipments.

States have implemented public information programs along the WIPP highway routes. Any significant deviation from the highway routes by the rail shipments will require the states to implement public information programs in new areas. Therefore, the status of public information programs shall be considered during the route selection process. WIPP shipments will only be routed through states which have had adequate lead time to implement public information programs.

A coordinated effort is needed among the Western Corridor States, WGA, DOE–CBFO and its carriers to clearly communicate the safety measures in place and the actual risk that shipments present. The public must have complete, timely, accurate and unbiased information and the opportunity to judge the merits of the safety program on its own. They should be provided opportunities to participate in the development and evaluation of the program.

In the event of an incident or accident involving a WIPP shipment, the states, DOE–CBFO and the rail company will be proactive in providing accurate information on the incident to the public. This information will be coordinated between the involved states, DOE–CBFO and the rail company prior to release.

The states and WGA have developed accurate information materials about the transportation safety program and about other issues of local and regional significance generated by the transportation program. These products conform to high standards for clarity and meet the needs of the public, the news media, and others.

Communications with the public and media will vary depending on the interest of the audiences. It will likely include the following:

- ☐ Publications/direct mail materials, including brochures, pamphlets, handbooks, newsletters, fact sheets, etc;
- ☐ Media work, including meetings with editorial boards, guest articles, news releases;
- ☐ An informational video;
- ☐ Public presentations to civic groups, schools, etc.;
- ☐ Public meetings; and
- ☐ Public displays (WIPP Road Show Trailer)

Because the transport of radioactive materials generates such strong emotions, those who speak to the media and the public about the transport program should have training in risk communications.

Evaluation: Evaluation of the Public Information and Participation program will include reviews of the public information products and materials, the effectiveness of public meetings and other events,

1 whether the focus of the states' public and media activities is directed in the most effective manner,
2 and whether states are following the Communications and Public Involvement Plan.

3 Public information products, such as fact sheets, brochures and informational videos, may be reviewed
4 by focus groups of representative target audiences. The lead states would work with WGA and
5 DOE–CBFO to conduct small focus groups to review these materials. The materials would be
6 evaluated for accuracy and clarity of information, and to ensure that the information is presented in a
7 fair, unbiased manner.

8 Evaluation forms may be provided to participants at public meetings. These forms will ask questions
9 to help the states gauge the effectiveness of the meetings. These forms will be reviewed by the lead
10 states on an annual basis. Pertinent information taken from these forms will be shared with all the
11 Western Corridor States, WGA, and DOE–CBFO.

12 Annually, the lead states will evaluate the effectiveness of the Communications and Public
13 Involvement Plan. This will be done by surveying the public information activities of each state,
14 WGA and DOE–CBFO. Significant deviations from the plan, identified problems, or major successes
15 will be discussed at the next quarterly meeting of the Technical Advisory Group.

Table 11: Public Information and Participation

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>List of Public Information Officers (PIO)/ Contacts on the WIPP Transportation Safety Program, Oregon and WGA, Revised February 2001 .</i>	OR	Final
Communications and Public Involvement Plan, Oregon, September 1999.	OR	Final
<i>Recommendations for Public Information Activities for WIPPTREX Exercises, Wyoming, January 1997.</i> (Contained in Section 10)	WY	Final
WGA Fact Sheet, <i>Western States Committed to Transport Safety</i> , Oregon, June 1999.	OR	Final
Public Meeting Evaluation Form, Oregon, February 1998.	OR	Final
<i>Public Information Coordination for WIPP Transportation Incidents and Accidents</i> , Oregon, February 1998.	OR	Final
Evaluation Plan		To be prepared
Reference material		
<i>Carlsbad Area Office Stakeholder Outreach Strategic Plan</i> , USDOE–CAO, March 1995.	CBFO	Final

Section 12: Rail Routing of WIPP Shipments

Lead State: TX Assistant Lead States: NM, WY, NV, CA

The Issue: There are various rail route options for moving transuranic waste from and between generator and storage sites, and the WIPP facility in New Mexico.

The Objective: Identify and select the safest and most acceptable routes for transporting transuranic waste between sites and to the WIPP facility.

The Approach: The identification of specific routes limits the number of affected jurisdictions and allows states to focus preparation and training resources. A single designated route shall be selected from each shipping point to the WIPP site or the receiving site for inter-site shipments. Selection of the route will be based primarily on safety and security. The route selection will be coordinated with the affected states and tribes. If the identified route is not acceptable to the states, DOE-CBFO shall work with the carrier to identify a route that is acceptable.

The route identification process shall be based upon the safety considerations. Although track classification is based upon acceptable speed limits imposed on trains, the speed limit is directly related to the quality of the track. Higher class track is maintained to a higher standard to allow higher train speeds. Therefore, the risk of incidents due to track failure is directly related to the class of the track. Higher speeds allowed on higher class track will also reduce the time in transit. Track classification shall be considered when selecting routes for shipments. The route selection shall ensure that the highest rated track is used.

Most route options will be along routes where the carrier has the ability to communicate with crews and to identify the locations of trains on their system through a central signal control system. Some route options may include sections of track that do not have this capability. Track not under central signal control, sometimes referred to as “dark track,” shall be avoided wherever practical. The distance to destination, grade, number and type of curves, high or wide-load restrictions, bridges and tunnels shall be considered when selecting routes.

Potential routes for rail shipments to WIPP could either closely parallel existing highway routes or deviate significantly. New rail routes not following existing highway routes will create significant demands on the states and DOE-CBFO to provide emergency response training, medical preparedness, and public information in new areas. Provided that the safety considerations discussed above are met, rail routes shall closely parallel existing highway routes where possible.

Many rail incidents occur in classification yards. WIPP shipments should avoid classification yards as much as possible. The probability of an incident involving WIPP shipments in a classification yard can be reduced through the following requirements. WIPP cars:

- Shall not be humped.
- Shall not be cut off while in motion
- Coupled into with more force than is necessary to complete the coupling.

- Be struck by any car moving over its own momentum.

To help ensure that these requirements are met, each WIPP car shall be labeled “Do not hump or cut off car while in motion.”

WIPP shipments shall only be routed through State and tribal jurisdictions where DOE–CBFO has provided technical assistance and funds for the purpose of training public safety officials and other emergency responders as provided under Section 16c of the WIPP Land Withdrawal Act. This includes the provision of training for public safety officials and other emergency responders, implementation of the Regional Medical Preparedness Action Plan, implementation of public information programs and acquisition of equipment.

DOE–CBFO will specify designated routes in its rail transportation services contracts, its transportation plan and related documents and require carriers to utilize only these specifically designated routes. There shall be no deviations from the designated routes except in emergency situations. No deviation shall be allowed without prior approval from DOE–CBFO and the affected states. At a minimum, DOE–CBFO will ensure that any emergency route deviation is in an area where training has been provided to emergency response personnel, or the shipment is escorted by carrier and/or DOE personnel adequately trained and equipped to respond to emergency situations. The contracts should include provisions relating to the specific route alternatives and the quality of track that may be used during an emergency route deviations. and train operating procedures along the alternate route.

The contracts shall clearly articulate the conditions under which route deviations may occur and the duties and responsibilities of the carrier and DOE–CBFO in the event of a required deviation.

Evaluation: Evaluation of routing issues will include an assessment of the benefit of DOE-CBFO’s preselection of routes (*e.g.*, states being able to concentrate their activities and resources along those identified routes), the safety of routes selected, environmental justice issues, and carrier adherence to the selected routes.

Initial evaluations shall be conducted prior to the first shipment. Evaluations shall be conducted annually thereafter.

Every two years after a route is opened, beginning with the year in which WIPP rail shipments commence, each state will evaluate the safety of the routes within its borders. Items in this evaluation will include the number of incidents along the route involving radioactive materials shipments, the number of incidents along the route, locations with high incident rates or other trouble spots. This information will be used to consider use of other routes or to call attention to potential trouble spots.

Table 12: Rail Routing of WIPP Shipments

New or modified documentation to be determined for rail shipments.

Documents	Responsible for Updates	Status
Documents included in Guide		
Evaluation Plan		To be prepared
Reference material		

Section 13: Program Evaluation

Lead State: WA Assistant Lead State: CO

The Issue: The WIPP Transportation Safety Program and its individual elements must be regularly and rigorously evaluated to determine their effectiveness.

The Objective: Measure the effectiveness of the WIPP Transportation Safety Program, identify areas needing improvement, and ensure open issues are resolved.

The Approach: Western states have worked with DOE-CBFO to develop a comprehensive transport safety program for WIPP shipments. This safety program is designed to reduce the risk of a WIPP transportation incident, ensure effectiveness of emergency response capabilities, and increase the public's confidence in the safety of the shipments and nuclear waste transportation in general. The program is also intended to serve as a model for use or adaptation for use on other radiological shipments.

The evaluation process has two elements: reviews of procedures and policies specific to each section, and evaluation of the WIPP Transportation Safety Program as a whole. Criteria for the evaluation for each section are developed by the lead states for each task. Criteria to evaluate the overall program are developed by all the states. Data collection and analysis should not be unnecessarily burdensome. Quantitative, qualitative, and anecdotal information will be used.

The evaluation of each section will include both the procedures and policy decisions specific to that section. For example, evaluation of bad weather and track conditions could include looking at specific procedures, such as whether the criteria to evaluate weather and track conditions are easy to understand. It could also include a review of the policy issues, such as whether the bad weather and track conditions criteria agreed to by the states results in shipments being held at appropriate times. This evaluation will be conducted by the lead states for each task.

The overall program evaluation includes looking at the interrelationship between various program elements and evaluating elements not contained in the individual sections. For example, the medical preparedness, training and equipment sections all have some elements that overlap. These interrelationships need to be evaluated to assure a consistency of effort and that tasks are not redundant. Program elements not evaluated as part of a particular section, such as coordination among the states and with Native American Nations, also need evaluation.

The overall program evaluation will occur biennially and involve all the states. The lead states for Program Evaluation will coordinate this activity and develop recommended suggestions for the program.

Program elements related to rail shipments shall be conducted as described in the individual sections of this Guide. Program elements related to remote-handled transuranic waste shipments should be evaluated within a year after the beginning of remote-handled shipments.

Table 13: Program Evaluation

Lead States:

Documents	Responsible for Updates	Status
Documents included in Guide		
<i>WIPP Transport Safety Program Biennial Program Review, September, 1999.</i>	OR, WY, WGA	Final

Section 14: Security Plan

Lead State: ID Assistant Lead States: AZ

The Issue: The states need to know how transuranic waste shipments are impacted by changes in the national threat levels and/or when a specific route or shipment is threatened.

The Objective: Implement a security plan and procedures based upon the national security threat levels and threats directed towards a specific shipment(s) or route(s). This includes a process for ensuring timely notification to the states when the national threat level changes and/or when a specific route or shipment is threatened.

The Approach: When the national security threat level changes, all the Western Corridor States and DOE must know who is responsible to alter a planned shipment or one that is en route as well as the correct line of communications and procedures based upon the various threat levels and the actions to be taken. Each Western Corridor State has identified the 24-hour point of contact for emergencies requiring some type of response by either law enforcement, medical or fire services. States shall ensure the 24-hour point of contact is informed of the procedures to be followed based upon the threat levels. While the WIPP shipments are not viewed as a serious target, they are U.S. Government shipments, and when the national threat levels change, protective actions may be required based upon the actual or suspected threat.

The security plan identifies how information will be shared and coordinated with the Western Corridor States and DOE when a state or DOE develops information or is advised of a threat to a specific route(s) or shipment(s).

The security plan shall correspond to the national security threat levels. In addition, the plan shall be responsive to local conditions, which may not be affected by or affect the national security threat level.

Evaluation: Annually the lead states shall review and update the security plan. Each state is responsible for informing the lead states of any changes to the telephone number for the 24-hour point of contact responsible for emergencies. Annually each state will verify to the lead states the people responsible at the 24-hour point of contact for emergencies understand the procedures as outlined in the security section.

The annual review shall be presented to the Technical Advisory Group at the first meeting conducted each calendar year.